

NOTE

The Occurrence of Encyrtiform Eggs in the Tanaostigmatidae
(Hymenoptera: Chalcidoidea)

The reproductive systems of adult tanaostigmatids (emerged from galls collected in Pima and Cochise counties, Arizona, August 1982, by J. LaSalle and S. Y. H. Lin) were examined. The ovaries of unmated females were removed and placed in saline solution. The ovarian eggs of *Tanaostigmodes albiclavus* Girault and an undescribed species of *Tanaostigma* were found to be encyrtiform (Fig. 1). Ovarian encyrtiform eggs are "dumb-bell" shaped. The egg consists of two bladders connected by a narrow tube, a structure that aids respiration in the deposited egg and anchors it to its host (Zinna. 1945. Boll. Lab. Entomol. Agraria 'Filippo Silvestri' Portici 18: 45-55; Maple. 1947. Univ. Calif. Publ. Entomol. 8(2): 30-38). Encyrtiform eggs occur throughout, and are typical of the Encyrtidae. Maple (1947: 25) stated "This type of egg, however, is not peculiar to the Encyrtidae, for similar shapes can be found in other chalcidoid families and in other superfamilies of Hymenoptera." Unfortunately, he did not name the other groups in which these eggs occur. Encyrtiform eggs are rare, however, and they are unknown from Eupelmidae which have stalked eggs. Clausen (1940. *Entomophagous Insects*.

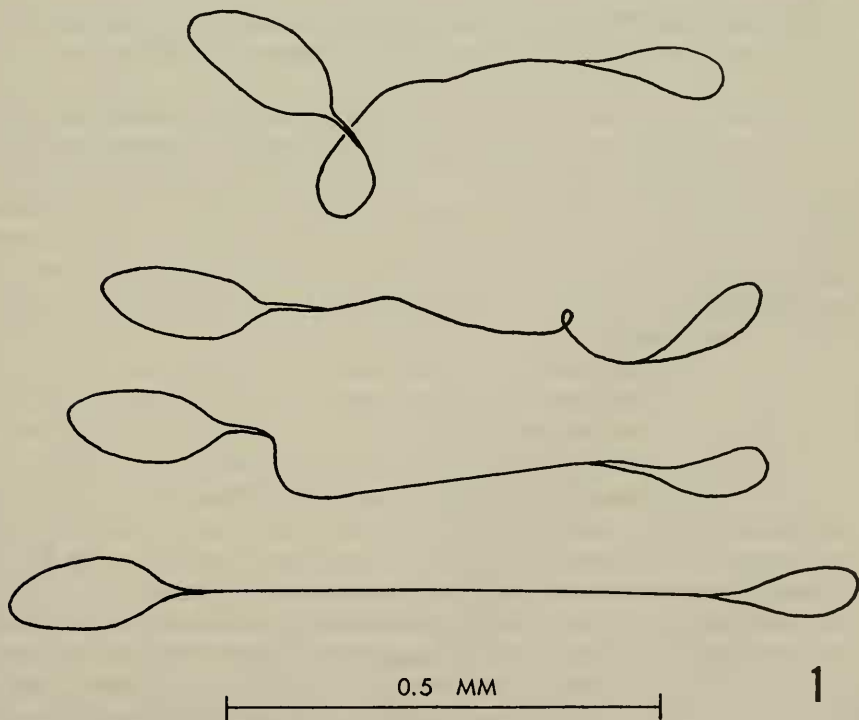


Fig. 1. *Tanaostigmodes albiclavus*, ovarian eggs.

Hafner Publ. Co., N.Y.: 197), in describing eupelmid eggs, stated, "There is little variation in form among the eggs of representatives of this family. The main body of the egg is ellipsoidal and bears a stalk of varying length at the anterior end."

Within the Chalcidoidea, tanaostigmatids, encyrtids and eupelmids form a discrete group which is considered monophyletic. However, the phylogenetic relationships between these three taxa are not clear. Tanaostigmatids have been classified as a family, as a subfamily of the Encyrtidae, and as a subfamily of the Eupelmidae. The presence of encyrtiform eggs in the tanaostigmatids is considered a derived character shared with the encyrtids. The importance of this synapomorphic character taken alone will not be addressed in this note. Rather it is reported because it is of value to future analyses of phylogenetic relationships among these three groups.

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NOTE

Abdominal Blotches of *Frankliniella trehernei* and Differentiation of *F. occidentalis* and *F. bruneri* (Thysanoptera: Thripidae)

The diagnostic significance of the grayish brown abdominal blotches in pale species of *Frankliniella* was not fully recognized in early taxonomic studies of some American species of the genus. Clear pale adult specimens without such blotches on abdominal tergites were usually considered teneral, and the presence or absence of such blotches tended to be ignored in the diagnoses. Although most of the pale species bear such blotches, few are completely pale even at maturity. Thus the presence or absence of abdominal blotches have diagnostic value. A small group of such species without abdominal blotches in the *intonsa* series of the *intonsa* group is differentiated from the rest of the series and is called the *runneri* complex. On the other hand, a few widely distributed pale species with abdominal blotches in the cool temperate regions are often fully or partly without them in the warmer subtropic regions. This makes the situations a little complicated. A good example is the pale form of *F. occidentalis* (Pergande). The particular case to be discussed here is of *F. trehernei* Morgan which was synonymized earlier with *occidentalis* by Bryan and Smith (1956. Univ. Calif. Publ. Entomol. 10: 388), based on diagnostic characters not including abdominal blotches.

The type series of *F. trehernei* (USNM) collected at Naramata and its vicinity in southern British Columbia, Canada, consists of 12 specimens which were all excessively treated with KOH, but the abdominal blotches are still feebly to clearly visible on four of them. This indication clearly confirmed the synonymy of *trehernei* with *occidentalis* which is always with abdominal blotches in the pale form